STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF MANAGEMENT AND BUDGET
STATE PLANNING COORDINATION

December 26, 2006

Mr. George Schroeder
Morris & Ritchie Associates, Inc.
18 Boulden Circle, Ste. 36
New Castle, DE 19720

RE: PLUS review – PLUS 2006-11-10; Meyer Property

Dear Mr. Schroeder:

Thank you for meeting with State agency planners on November 29, 2006 to discuss the proposed plans for the Meyer Property project to be located west of Magnolia bordered by Woodleytown Road, Briarbush Road, and Millchop Lane.

According to the information received, you are seeking subdivision plan approval through Kent County for 493 residential units on 165.96 acres.

Please note that changes to the plan, other than those suggested in this letter, could result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. The developers will also need to comply with any Federal, State and local regulations regarding this property. We also note that as Kent County is the governing authority over this land, the developers will need to comply with any and all regulations/restrictions set forth by the County.

Executive Summary

The following section includes some site specific highlights from the agency comments found in this letter. This summary is provided for your convenience and reference. The full text of this letter represents the official state response to this project. ***Our office***

notes that the applicants are responsible for reading and responding to this letter and all comments contained within it in their entirety.

State Strategies/Project Location

- This project is located in Investment Level 2 according to the *Strategies for State Policies and Spending*. This site is also located in the Kent County Growth Zone. Investment Level 2 reflects areas where growth is anticipated by local, county, and State plans in the near term future. State investments will support growth in these areas. Our office has no objections to the proposed development of this project in accordance with the relevant County codes and ordinances.

- We support the use of the Kent County TDR ordinance for this project. We encourage the developer to consider utilizing some different unit types, such as condos or staked flats, in order to increase the amount of TDRs used in this project.

Street Design and Transportation

- Woodleytown Road is a major collector road and Millchop Lane and Briarbush Road are local roads. DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 40 feet from the centerline on collector roads and 30 feet for the centerline on local roads.

- DelDOT will also require the construction of a 10-foot wide shared use path in a 15-foot wide permanent easement across the frontages of the site.

- A traffic impact study will be required for the proposed development. On March 13, 2006, a meeting was held to set the scope of work for that study.

- DelDOT will require the developer to improve the geometry of Briarbush Road and sight distance at its intersection with Woodleytown Road. Preliminarily those improvements would require relocating the segment of Briarbush Road between Woodleytown Road and Millchop Lane.

- The plan shows seven small street loops serving single-family lots. As shown, they do not appear to meet DelDOT's minimum horizontal radius requirement of 150 feet for local subdivision streets.

- The developer should anticipate being required to improve Woodleytown Road to meet DelDOT standards for major collector roads, which include 12-

foot wide travel lanes and 8-foot wide shoulders. Similarly, the developer should anticipate being required to improve Briarbush Road and Millchop Lane to meet DelDOT standards for local roads, which include 11-foot lanes and 5-foot shoulders. An overlay of the existing roadway may be required on all three roads.

Natural and Cultural Resources

- According to the Statewide Wetland Mapping Project (SWMP) mapping, wetlands are located on the site. Impacts to wetlands and other water bodies should be minimized.

- Streets and lots should be laid out so as to not cross or intersect wetland areas or forested areas.

- DNREC recommends that vegetated buffers of no less than 100 feet be employed around wetlands and water bodies.

- The Drainage Program has concerns for the existing drainage conveyance near the curve on Millchop Lane. The Drainage Program requests that the engineer take precautions to ensure that the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of on site storm water.

- To maximize the existing buffering capacity and wildlife habitat on site, community open space should be designated along the existing woodland edge.

- The existing forested riparian buffer (at least 100 feet, preferably 300 feet in width) should be maintained and clearing kept to an absolute minimum. This buffer will serve to reduce sedimentary and other inputs which could degrade the integrity of the wetlands and the associated stream system. It will also provide a travel corridor for wildlife.

- Forest loss could further be reduced by:

    - Relocating the stormwater management pond that will require tree clearing to a non-forested portion of the site.

    - Omitting the site plan feature that appears to be a ‘road connection’ to an adjacent parcel or a ‘circular trail’ through the woods. Conversely, this site

plan feature could be designed in a way that does not require so much tree clearing and forest fragmentation.

- If clearing has to occur we recommend it not occur April 1st to July 31st to reduce impacts to birds and other wildlife species that utilize trees for breeding.

The following are a complete list of comments received by State agencies:

Office of State Planning Coordination – Contact: David Edgell 739-3090

This project is located in Investment Level 2 according to the *Strategies for State Policies and Spending*. This site is also located in the Kent County Growth Zone. Investment Level 2 reflects areas where growth is anticipated by local, county, and State plans in the near term future. State investments will support growth in these areas.

Our office is particularly encouraged that the developer is taking advantage of the Kent County Transfer of Development Rights (TDR) ordinance. We support equity transfer programs such as TDRs which preserve land in our rural areas while concentrating growth in designated growth zones where infrastructure and services will be available to new residents. In addition, Kent County's ordinance contains high standards for subdivision design and architecture in TDR developments, which will assure that the development is unique, attractive, and of a high quality.

We note that the subdivision plan presented to us at the PLUS meeting has a density of slightly over 3 units per acre, and is only using 17 TDR credits. We encourage the developer to consider increasing the density (within the parameters set under Kent County's ordinance) n order to utilize more TDR credits. One suggestion is the introduction of a "manor house" or "big house" residential unit type. This type of structure would have massing and architectural features similar to a large single family home, but instead is comprised of condos or stacked flat units. You are welcome to contact our office for some information.

Our office has no objections to the development of this parcel in accordance with all relevant Kent County codes and ordinances.

Division of Historical and Cultural Affairs – Contact: Alice Guerrant 739-5685

While the parcel does not contain any known historic resources, the house cut out of the parcel is a historic farmstead (K-3541), shown on Beers Atlas of 1868 as the D. W. Frear House. Beers Atlas also shows the Dr. Jump House close to the northwest side of the

parcel. The 1931 USGS 15' Wyoming topographic map shows a building on the northwest boundary of the parcel at Millchop Rd., and by the 1937 USDA aerial, another building appears in the corner of the parcel at the intersection of Briarbush and Woodleytown roads. There are also areas of medium to high potential for prehistoric-period archaeological sites in the southwestern portion of the parcel. There are a number of historic houses nearby on Woodleytown Rd., and across Briarbush and Millchop roads to the north and northwest.

Small, rural, family cemeteries often are found in relation to historic farm complexes, such as the Frear and Jump houses, usually a good distance behind or to the side of the house. The developer should be aware of Delaware's Unmarked Human Remains Act of 1987, which governs the discovery and disposition of such remains. The unexpected discovery of unmarked human remains during construction can result in significant delays while the process is carried out, and the developer may want to hire an archaeological consultant to check for the possibility of a cemetery here if this development is approved. The DHCA would have to have a copy of any archaeological report done for this purpose. They will be happy to discuss these issues with the developer; the contact person for this program is Faye Stocum, 302-736-7400.

The DHCA would like the opportunity to examine the area for any archaeological sites prior to any ground-disturbing activities, to learn something about their location, nature, and extent.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

1) Woodleytown Road is a major collector road and Millchop Lane and Briarbush Road are local roads. DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 40 feet from the centerline on collector roads and 30 feet for the centerline on local roads. Therefore we will require right-of-way dedication along the frontage to provide any additional width needed from this project.

2) DelDOT will also require the construction of a 10-foot wide shared use path in a 15-foot wide permanent easement across the frontages of the site.

3) A traffic impact study will be required for the proposed development. On March 13, 2006, a meeting was held to set the scope of work for that study. A copy of the minutes of that meeting is enclosed. The scope contained therein is still valid.

4) As discussed at the meeting just mentioned, DelDOT will require the developer to improve the geometry of Briarbush Road and sight distance at its intersection with Woodleytown Road. Preliminarily those improvements would require relocating the segment of Briarbush Road between Woodleytown Road and Millchop Lane.

5) The plan shows seven small street loops serving single-family lots. As shown, they do not appear to meet DelDOT's minimum horizontal radius requirement of 150 feet for local subdivision streets.

6) The developer should anticipate being required to improve Woodleytown Road to meet DelDOT standards for major collector roads, which include 12-foot wide travel lanes and 8-foot wide shoulders. Similarly, the developer should anticipate being required to improve Briarbush Road and Millchop Lane to meet DelDOT standards for local roads, which include 11-foot lanes and 5-foot shoulders. An overlay of the existing roadway may be required on all three roads.

7) The applicant's site engineer should contact the DelDOT project manager for Kent County, Mr. Brad Herb, regarding specific requirements for streets and access. Mr. Herb may be reached at (302) 266-9600.

The Department of Natural Resources and Environmental Control – Contact: Kevin Coyle 739-9071

Soils

Based on the Kent County soil survey update, Sassafras, Greenwich, Downer, Unicorn, Woodstown, Fallsington and Manahawkin were mapped in the immediate vicinity of the proposed construction. Sassafras, Greenwich, Downer and Unicorn are well-drained upland soils that, generally, have few limitations for development. Woodstown is a moderately well-drained soil of low-lying uplands that has moderate limitations for development. Fallsington is a poorly-drained wetland associated (hydric) soil that has severe limitations for development. Manahawkin is a very poorly-drained wetland associated (hydric) floodplain soil that has the highest severity level for development.

Wetlands

According to the Statewide Wetland Mapping Project (SWMP) mapping, palustrine forested riparian wetlands were mapped along the parcel's entire southern boundary, directly adjoining a headwater tributary known as the Thorndyk Branch. Palustrine

unconsolidated bottom and palustrine emergent wetlands were also mapped on the parcel. Impacts to wetlands and other water bodies should be minimized. Streets and lots should be laid out so as to not cross or intersect wetland areas or forested areas. DNREC recommends that vegetated buffers of no less than 100 feet be employed around wetlands and water bodies. There should not be any buildings or associated infrastructure within the buffer. To minimize potential homeowner activities within wetlands, no lot lines should contain wetlands, their buffers or other resources of conservation concern.

PLUS application materials indicate that wetlands have been delineated (presumably a field delineation). This delineation should be verified by the Army Corps of Engineers through the Jurisdictional Determination process. Please note that impacts to palustrine wetlands are regulated by the Army Corps of Engineers through Section 404 of the Clean Water Act. In situations where the applicant believes that the delineated wetlands on their parcel are nonjurisdictional isolated wetlands, the Corps must be contacted to make the final jurisdictional assessment. They can be reached by phone at 736-9763. Certain drainage ditches may also be jurisdictional either under the U.S. Army Corps of Engineers Program or through the DNREC Wetland and Subaqueous Lands program.

In addition, individual 404 permits and certain Nationwide Permits from the Army Corps of Engineers also require 401 Water Quality Certification from the DNREC Wetland and Subaqueous Land Section and Coastal Zone Federal Consistency Certification from the DNREC Division of Soil and Water Conservation, Delaware Coastal Programs Section. Each of these certifications represents a separate permitting process.

To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-9943 to schedule a meeting.

As noted previously, this parcel(s) contains SWMP-mapped headwater riparian wetlands (associated with a headwater stream tributary, a.k.a. Thorndyk Branch). Headwater riparian wetlands are important for the protection of water quality and the maintenance/integrity of the ecological functions throughout the length of the stream, including the floodplain system and/or water bodies further downstream. Since such streams are a major avenue for nutrient-laden stormwater and sediment runoff, their protection deserves the highest priority. In recognition of this concern, the Watershed Assessment Section strongly recommends the applicant consider preserving the existing riparian buffer in its entirety.

Water Bodies

This parcel is bordered by Thorndyk Branch. Currently, more than 90 percent of Delaware's waterways are considered impaired because of this designation DNREC recommends a 100-foot vegetated buffer comprised of native plants from the edge of the streams and the wetland complex. There is opportunity for habitat enhancement along the creek. The developer is strongly encouraged to provide larger buffers along this water body. Planting of additional trees and shrubs can help improve water quality, would improve habitat and would provide the community with additional aesthetic and recreational resources.

Impervious Cover

Based on a review of the PLUS application, post-development surface imperviousness is estimated to be about 16.5 percent. However, given the scope and density of this project, this estimate is clearly an **underestimate**. The applicant's apparent use of natural areas (wetlands or buffers) and functional amenity areas (stormwater management areas) for meeting the County's open space requirements artificially lowers the amount of this project's post-development projection of surface imperviousness, ultimately underestimating its environmental impacts. Furthermore, the applicant should also realize that all created forms of constructed surface imperviousness (i.e., rooftops, sidewalks, and roads) and their extent should be comprehensively accounted for when calculating surface imperviousness. It was not clear from the information submitted whether all such factors were comprehensively assessed by the applicant. It is strongly recommended that the applicant address all of the above-mentioned concerns in the finalized calculation for surface imperviousness.

Studies have shown a strong relationship between increases in impervious cover to decreases in a watershed's overall water quality. It is strongly recommended that the applicant implement best management practices (BMPs) that reduce or mitigate some of its most likely adverse impacts. Reducing the amount of surface imperviousness through the use of pervious paving materials ("pervious pavers") in lieu of asphalt or concrete in conjunction with an increase in forest cover preservation or additional tree plantings are some examples of practical BMPs that could easily be implemented to help reduce surface imperviousness.

TMDLs

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Murderkill watershed. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water quality limited

water body" can assimilate and still meet water quality standards to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. Although TMDLs are required by federal law, states are charged with developing and implementing standards to support these desired use goals. In the Murderkill watershed, a post-development TMDL reduction level of 50 and 30 percent will be required for nitrogen and phosphorus, respectively.

TMDL Compliance through the Pollution Control Strategy (PCS)

As stated above, Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Murderkill Watershed. The TMDL calls for a 50% reduction for nitrogen and 30% for phosphorus from baseline conditions. The Department developed an assessment tool to evaluate how your proposed development may reduce nutrients to meet the TMDL requirements. Additional reductions may be possible through the implementation of Best Management Practices such as wider vegetated buffers along watercourses, increasing passive, wooded open space, and the use of stormwater management treatment trains. Contact Lyle Jones at 302-739-9939 for more information on the assessment tool.

Water Resource Protection Areas

The Water Supply Section has determined that a large portion of the southeast edge falls within a delineated area of excellent ground-water recharge potential (see following map and attached map). No wellhead protection areas were found.

Excellent recharge areas are near-surface areas within which precipitation infiltrates the land surface to the unconfined aquifer at a more rapid rate than other areas. Delaware Geological Survey Report of Investigations No. 66 discussed and mapped the groundwater recharge areas of Kent and Sussex Counties. The intent of the report was to identify areas of excellent recharge to protect them as critical areas. The Report states that the recharge potential "map categories are indicators of how fast contaminants will move and how much water may become contaminated" (Andres, 2004, pg 1).

The Water Supply Section recommends that that portion of the new development within the excellent ground-water recharge area not exceed 20% impervious cover. The purpose of an impervious cover threshold is to minimize loss of recharge (and associated increases in storm water) and protect the quality and quantity of ground water and surface water supplies.

The proposed development would change the total impervious cover from 0% to approximately 16.5%. These numbers are based on the total area and are not specific to

the excellent recharge area. The developer on the PLUS application provided the numbers.

The plans submitted show good placement of the storm-water management ponds outside the excellent ground-water recharge potential area. The plans also propose two double lane connections into the development from Woodleytown Road. These connections are in the ground-water recharge protection area. The applicant states that the development would generate 3,126 vehicle trips on an average weekday. This land use produces petroleum hydrocarbons, other organics, metals, and other inorganics (DNREC, 1999). These contaminants associated with this land use could easily infiltrate the unconfined aquifer and compromise water quality (see map).

Meyer Property (PLUS 2006-11-01) Proposed site shown in blue outline. Area of excellent groundwater recharge potential in shaded in green. Location of entry is shown in a black circle and labeled.

References

Andres, A. Scott, 2004, Ground-Water Recharge Potential Mapping in Kent and Sussex Counties, Delaware: Delaware Geological Survey Report of Investigations No. 66, p. 14.http://www.udel.edu/dgs/Publications/pubform.html#nvestigations

Delaware Department of Natural Resources and Environmental Control. (1999). The State of Delaware Source Water Assessment Plan: Dover, DE, p. 301. http://www.wr.udel.edu/swaphome/publications.html

Water Supply

The project information sheets state water will be provided to the project by Artesian Water Company via a central water system. DNREC records indicate that the project is located within the public water service area granted to Artesian Water Company under Certificate of Public Convenience and Necessity 02-CPCN-12.

Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the Water Supply Section prior to construction of the well points. In addition, a water allocation permit will be needed if the pumping rate will exceed 50,000 gallons per day at any time during operation.

All well permit applications must be prepared and signed by licensed water well contractors, and only licensed well drillers may construct the wells. Please factor in the necessary time for processing the well permit applications into the construction schedule. Dewatering well permit applications typically take approximately four weeks to process, which allows the necessary time for technical review and advertising.

Should you have any questions concerning these comments, please contact Rick Rios at 302-739-9944.

Sediment and Erosion Control/Stormwater Management

Requirements

1. Land disturbing activities in excess of 5,000 square feet are regulated under the Delaware Sediment and Stormwater Regulations. A detailed sediment and stormwater management plan must be reviewed and approved by the Kent Conservation District prior to any land disturbing activity (i.e. clearing, grubbing, filling, grading, etc.) taking place. The review fee and a completed Application for a Detailed Plan are due at the time of plan submittal to the Kent Conservation District. Construction inspection fees based on developed area and stormwater facility maintenance inspection fees based on the number of stormwater facilities are due prior to the start of construction. Please refer to the fee schedule for those amounts.

2. The following notes must appear on the record plan:

    - The Kent Conservation District reserves the right to enter private property for purposes of periodic site inspection.

- The Kent Conservation District reserves the right to add, modify, or delete any erosion or sediment control measure, as it deems necessary.
- A clear statement of defined maintenance responsibility for stormwater management facilities must be provided on the Record Plan.

3. Ease of maintenance must be considered as a site design component and a maintenance set aside area for disposal of sediments removed from the basins during the course of regular maintenance must be shown on the Record Plan for the subdivision.

4. All drainage ways and storm drains should be contained within drainage easements and clearly shown on the plan to be recorded by Kent County.

5. A soils investigation supporting the stormwater management facility design is required to determine impacts of the seasonal high groundwater level and soils for any basin design.

Comments:

1. The designer is encouraged to consider the conservation design approach and limit the amount of tree clearing required for the development of the site including the stormwater management facilities shown in the wooded areas.

2. Access to the proposed stormwater facility must be provided for periodic maintenance. This access should be at least 12 feet wide to leading to the facility and around the facility's perimeter.

3. It is recommended that the stormwater management areas be incorporated into the overall landscape plan to enhance water quality and to make the stormwater facility an attractive community amenity.

4. A letter of no objection to re-recordation will be provided once the detailed Sediment and Stormwater Management plan has been re-approved.

5. Proper drainage of developed lots and active open space should be considered in the development of the grading plan for this subdivision.

6. Based on the site characteristics, a pre-application meeting is suggested to discuss stormwater management and drainage for this site.

Drainage

After review of the proposed plan, the Drainage Program has concerns for the existing drainage conveyance near the curve on Millchop Lane. The Drainage Program requests that the engineer take precautions to ensure that the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of on site storm water. The Drainage Program requests that the engineer check existing downstream ditches and pipes for function and blockages prior to the construction. The engineer is encouraged to meet with downstream landowners to obtain their concerns of current drainage as well as the additional drainage impact this project will have on the area. Please notify downstream landowners if there will be a change in the volume of water released on them.

The Drainage Program does not support the removal of trees for the creation of stormwater management areas. However, the Drainage Program recognizes that tree removal is unavoidable in some cases. Where practical, plant native trees and shrubs to compensate for the loss of nutrient uptake and stormwater absorption the removed trees provided.

The Drainage Program does not have a clear understanding how stormwater will convey to the stormwater management areas. The Drainage Program requests that the routing of major stormwater pipes through yards be prohibited.

The Drainage Program encourages the elevation of rear yards to direct water towards the streets where storm drains are accessible for maintenance. However, the Drainage Program recognizes the need for catch basins in rear yards in certain cases. Therefore, catch basins placed in rear yards will need to be clear of obstructions and be accessible for maintenance. Decks, sheds, fences, kennels, and other structures placed along the storm drains, or within 10 feet of the catch basins, can hinder drainage patterns as well as future maintenance to the storm drains or catch basins. Deed restrictions, along with drainage easements recorded on deeds, should ensure adequate future maintenance access.

The Drainage Program requests a 15-foot side yard setback on all lots with a drainage easement on the side unless otherwise specified. A 15-foot side yard setback will allow room for equipment to utilize the entire drainage easement and maneuver free of obstructions if the drainage conveyance requires periodic maintenance or future re-construction.

The Drainage Program requests a 10-foot drainage easement around all catch basins located on private property to ensure adequate room for maintenance. The Drainage

Program recommends restrictions on fences, sheds, and other structures within the easement to prevent obstructions from being placed within 10 feet of the catch basin.

Record all drainage easements on deeds and place restrictions on obstructions within the easements to ensure access for periodic maintenance or future re-construction.

Open Space

To maximize the existing buffering capacity and wildlife habitat on site, community open space should be designated along the existing woodland edge. In areas set aside for passive open space, the developer is encouraged to consider establishment of additional forested areas or meadow-type grasses. Doing so will provide wildlife habitat and it will create recreational opportunities for residents. Once established, these ecosystems provide increased water infiltration into groundwater, decreased run-off into surface water, air quality improvements, and require much less maintenance than traditional turf grass, an important consideration if a homeowners association will take over responsibility for maintenance of community open spaces. Reforestation efforts should be targeted to open space areas adjacent to the forest. The developer is encouraged to review "Community Spaces, Natural Places: A guide to restoration, management, and maintenance of community open space". This document provides a reference of practical and successful open space management techniques that emphasize natural landscape alternatives other than turf grass management. The guidebook is available online at: http://www.dnrec.state.de.us/dnrec2000/Divisions/Soil/dcmp/. In addition, the community should be provided with a detailed landscape management plan that outlines how to manage each open space area, as well as how to manage for invasive species.

Forest Preservation

Although the wooded area within this project is fairly small, it mostly occurs along a riparian zone. This woodlot is likely a travel corridor for wildlife. Cumulative impacts to forest and water bodies in this area are a concern considering the number of proposed or in-progress developments. Therefore, the existing forested riparian buffer (at least 100 feet, preferably 300 feet in width) should be maintained and clearing kept to an absolute minimum. This buffer will serve to reduce sedimentary and other inputs which could degrade the integrity of the wetlands and the associated stream system. It will also provide a travel corridor for wildlife.

Forest loss could further be reduced by:

1) Relocating the stormwater management pond that will require tree clearing to a non-forested portion of the site. It seems counterproductive to clear trees which function in

flood abatement to create a pond with the same purpose. If relocation is not feasible, then an alternate method of stormwater management that does not require tree clearing should be employed.

2) Omitting the site plan feature that appears to be a 'road connection' to an adjacent parcel or a 'circular trail' through the woods. Conversely, this site plan feature could be designed in a way that does not require so much tree clearing and forest fragmentation.

3) Although leaving trees intact is more beneficial to most wildlife, if clearing has to occur we recommend it not occur April 1st to July 31st to reduce impacts to birds and other wildlife species that utilize trees for breeding. This recommendation would only protect those species during one breeding season, as once trees are cleared the result is an overall loss of habitat.

Nuisance Geese

The applicant indicated that nuisance geese would be considered in the planning of this project but methods of control were not indicated. Wet ponds planned for the subdivision may attract waterfowl like resident Canada geese and mute swans. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short manicured lawns around ponds provide an attractive habitat for these species. We recommend native plantings of tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area (50 feet) around the perimeter. Waterfowl do not feel safe when they can not see the surrounding area for possible predators. These plantings should be completed as soon as possible as it is easier to deter geese when there are only a few than it is to remove them once they become plentiful. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, residents or the home-owners association will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with a reduction in the number and/or size of the ponds, proper landscaping, monitoring, and other techniques, geese problems can be minimized.

Solid Waste

Each Delaware household generates approximately 3,600 pounds of solid waste per year. On average, each new house constructed generates an additional 10,000 pounds of construction waste. Due to Delaware's present rate of growth and the impact that growth will have on the state's existing landfill capacity, the applicant is requested to be aware of the impact this project will have on the State's limited landfill resources and, to the extent

possible, take steps to minimize the amount of construction waste associated with this development.

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 37.8 tons (75,670.4 pounds) per year of VOC (volatile organic compounds), 31.3 tons (62,649.9 pounds) per year of NOx (nitrogen oxides), 23.1 tons (46,224.3 pounds) per year of SO2 (sulfur dioxide), 2.1 ton (4,114.8 pounds) per year of fine particulates and 3,164.9 tons (6,329,728.8 pounds) per year of CO2 (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 15.3 tons (30,521.3 pounds) per year of VOC (volatile organic compounds), 1.7 ton (3,358.3 pounds) per year of NOx (nitrogen oxides), 1.4 ton (2,786.9 pounds) per year of SO2 (sulfur dioxide), 1.8 ton (3,596.3 pounds) per year of fine particulates and 61.9 tons (123,726.5 pounds) per year of CO2 (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 6.0 tons (12,096.4 pounds) per year of NOx (nitrogen oxides), 21.0 tons (42,074.6 pounds) per year of SO2 (sulfur dioxide) and 3,103.0 tons (6,206,002.3 pounds) per year of CO2 (carbon dioxide).

	VOC	NOx	SO_2	$PM_{2.5}$	CO_2
Mobile	37.8	31.3	23.1	2.1	3164.9
Residential	15.3	1.7	1.4	1.8	61.9
Electrical Power		6.0	21.0		3103.0
TOTAL	53.1	39.0	45.5	3.9	6329.8

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 6.0 tons of nitrogen oxides per year and 21.0 tons of sulfur dioxide per year.

A significant method to mitigate this impact would be to require the builder to construct Energy Star qualified homes. Every percentage of increased energy efficiency translates into a percent reduction in pollution. Quoting from their webpage, http://www.energystar.gov/:

"ENERGY STAR qualified homes are independently verified to be at least 30% more energy efficient than homes built to the 1993 national Model Energy Code or 15% more efficient than state energy code, whichever is more rigorous. These savings are based on heating, cooling, and hot water energy use and are typically achieved through a combination of:

building envelope upgrades,
high performance windows,
controlled air infiltration,
upgraded heating and air conditioning systems,
tight duct systems and
upgraded water-heating equipment."

The Energy office in DNREC is in the process of training builders in making their structures more energy efficient. The Energy Star Program is excellent way to save on energy costs and reduce air pollution. They highly recommend this project development and other residential proposals increase the energy efficiency of their homes.

The Energy Office also recommends that the home builders offer geothermal and photo voltaic energy options. Applicable vehicles should use retrofitted diesel engines during construction.

The development should provide tie-ins to the nearest bike paths, links to mass transit, and fund a lawnmower exchange program for their new occupants.

State Fire Marshal's Office – Contact: Duane Fox 856-5298

These comments are intended for informational use only and do not constitute any type of approval from the Delaware State Fire Marshal's Office. At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation (DSFPR):

a. **Fire Protection Water Requirements**:
   - Water distribution system capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Assembly and Townhouses)
   - Where a water distribution system is proposed for single-family dwellings it shall be capable of delivering at least 500 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 1000 feet spacing on centers are required. (One & Two- Family Dwelling)

- Where a water distribution system is proposed for the site, the infrastructure for fire protection water shall be provided, including the size of water mains for fire hydrants and sprinkler systems.

b. **Fire Protection Features:**
   - All structures over 10,000 Sq. Ft. aggregate will require automatic sprinkler protection installed.
   - Buildings greater than 10,000 sq.ft., 3-stories or more, over 35 feet, or classified as High Hazard, are required to meet fire lane marking requirements
   - Show Fire Department Connection location (Must be within 300 feet of fire hydrant), and detail as shown in the DSFPR.
   - Show Fire Lanes and Sign Detail as shown in DSFPR
   - For townhouse buildings, provide a section / detail and the UL design number of the 2-hour fire rated separation wall on the Site plan.

c. **Accessibility**
   - All premises, which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from Woodleytown Road and Millchop Lane must be constructed so fire department apparatus may negotiate it.
   - Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
   - Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.
   - The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
   - The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

d. **Gas Piping and System Information:**
   - Provide type of fuel proposed, and show locations of bulk containers on plan.

e. **Required Notes**:
- Provide a note on the final plans submitted for review to read " All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations"
- Proposed Use
- Alpha or Numerical Labels for each building/unit for sites with multiple buildings/units
- Square footage of each structure (Total of all Floors)
- National Fire Protection Association (NFPA) Construction Type
- Maximum Height of Buildings (including number of stories)
- Townhouse 2-hr separation wall details shall be shown on site plans
- Note indicating if building is to be sprinklered
- Name of Water Provider
- Letter from Water Provider approving the system layout
- Provide Lock Box Note (as detailed in DSFPR) if Building is to be sprinklered
- Provide Road Names, even for County Roads

Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: www.delawarestatefiremarshal.com, technical services link, plan review, applications or brochures.

Department of Agriculture - Contact: Scott Blaier 698-4500

The Delaware Department of Agriculture has no objections to the proposed subdivision application. The *Strategies for State Policies and Spending* encourages environmentally responsible development in areas in Investment Level 2. The Department would also like to commend, and thank, the applicant for their use of Kent County's transfer of development rights (TDR) program.

Some of this site has been designated as having "excellent" ground-water recharge potential. DNREC has mapped all ground-water recharge-potential recharge areas for the state, and an "excellent" rating designates an area as having important groundwater recharge qualities.

Senate Bill 119, enacted by the 141st General Assembly in June of 2001, requires the counties and municipalities with over 2,000 people to adopt as part of the update and implementation of their 2007 comprehensive land use plans, areas delineating excellent ground-water recharge potential areas. Furthermore, the counties and municipalities are

required to adopt regulations by December 31, 2007 governing land uses within those areas to preserve ground-water quality and quantity.

Maintaining pervious cover in excellent and good recharge areas is crucial for the overall environmental health of our state and extremely important to efforts which ensure a safe drinking water supply for future generations. Retention of pervious cover to ensure an adequate future water supply is also important for the future viability of agriculture in the First State. The loss of every acre of land designated as "excellent" and "good" recharge areas adversely impacts the future prospects for agriculture in Delaware. The developer should make every effort to protect and maintain valuable ground-water recharge potential areas.

Right Tree for the Right Place

The Delaware Department of Agriculture Forest Service encourages the developer to use the "Right Tree for the Right Place" for any design considerations. This concept allows for the proper placement of trees to increase property values in upwards of 25% of appraised value and will reduce heating and cooling costs on average by 20 to 35 dollars per month. In addition, a landscape design that encompasses this approach will avoid future maintenance cost to the property owner and ensure a lasting forest resource.

Native Landscapes

The Delaware Department of Agriculture and the Delaware Forest Service encourages the developer to use native trees and shrubs to buffer the property from the adjacent land-use activities near this site. A properly designed forested buffer can create wildlife habitat corridors and improve air quality to the area by removing six to eight tons of carbon dioxide annually and will clean our rivers and creeks of storm-water run-off pollutants. To learn more about acceptable native trees and how to avoid plants considered invasive to our local landscapes, please contact the Delaware Department of Agriculture Plant Industry Section at (302) 698-4500.

Tree Mitigation

The Delaware Forest Service encourages the developer to implement a tree mitigation program to replace trees at a 1:1 ratio within the site and throughout the community. This will help to meet the community's forestry goals and objectives and reduce the environmental impacts to the surrounding natural resources. To learn more, please contact our offices at (302) 349-5754.

Public Service Commission - Contact: Andrea Maucher 739-4247

Any expansion of natural gas or installation of a closed propane system must fall within Pipeline Safety guidelines. Contact: Malak Michael at (302) 739-4247.

Delaware State Housing Authority – Contact Vicki Walsh 739-4263

This proposal is for a site plan review for 493 residential units on 166 acres located west of Magnolia along the north side of Woodleytown Road, the west side of Briarbush Road, and the south side of Millchop Lane. According to the *State Strategies Map,* the proposal is located in an Investment Level 2 area and inside the growth zone. As a general planning practice, DSHA encourages residential development inside growth zones, where residents will have proximity to services, markets, and employment opportunities. Furthermore, the proposal targets townhouses. DSHA supports the variety of housing types and finds that townhouses are usually affordable to first time homebuyers and people of moderate income. According to the most recent real estate data collected by DSHA, the average home price in Kent County is $235,000. However, families earning respectively 80%-100% of Kent County's median income only qualify for mortgages of $138,205-$176,741, thus creating an affordability gap of $96,795-$58,259. The provision of units within reach of families earning at least 80%-100% of Kent County's median income will ensure housing that is affordable for first time homebuyers.

Department of Education – Contact: John Marinucci 739-4658

This proposed development is within the Caesar Rodney School District boundaries. DOE offers the following comments on behalf of the Caesar Rodney School District.

1. Using the DOE standard formula, this development will generate an estimated 140 students, as a result of a portion of the development being age restricted.
2. DOE records indicate that the Caesar Rodney School Districts' *elementary schools **are not** at or beyond 100% of current capacity* based on September 30, 2005 elementary enrollment.
3. DOE records indicate that the Caesar Rodney School Districts' *secondary schools **are** at or beyond 100% of current capacity* based on September 30, 2005 secondary enrollment.
4. The Superintendent of the Caesar Rodney School District has issued multiple letters to the Kent County Department of Planning Services communicating the district's opposition to continued residential growth in light of the district's lack of capacity given the number of planned and recorded residential sub divisions within district boundaries.

5. This development will create additional elementary and secondary student population growth which will further compound the existing shortage of space.
6. The developer is strongly encouraged to contact the Caesar Rodney School District Administration to address the issue of school over-crowding that this development will exacerbate.
7. DOE requests developer work with the Caesar Rodney School District transportation department to establish developer supplied bus stop shelter ROW and shelter structures, interspersed throughout the development as determined and recommended by the local school district.

Following receipt of this letter and upon filing of an application with the local jurisdiction, the applicant shall provide to the local jurisdiction and the Office of State Planning Coordination a written response to comments received as a result of the pre-application process, noting whether comments were incorporated into the project design or not and the reason therefore.

Thank you for the opportunity to review this project. If you have any questions, please contact me at 302-739-3090.

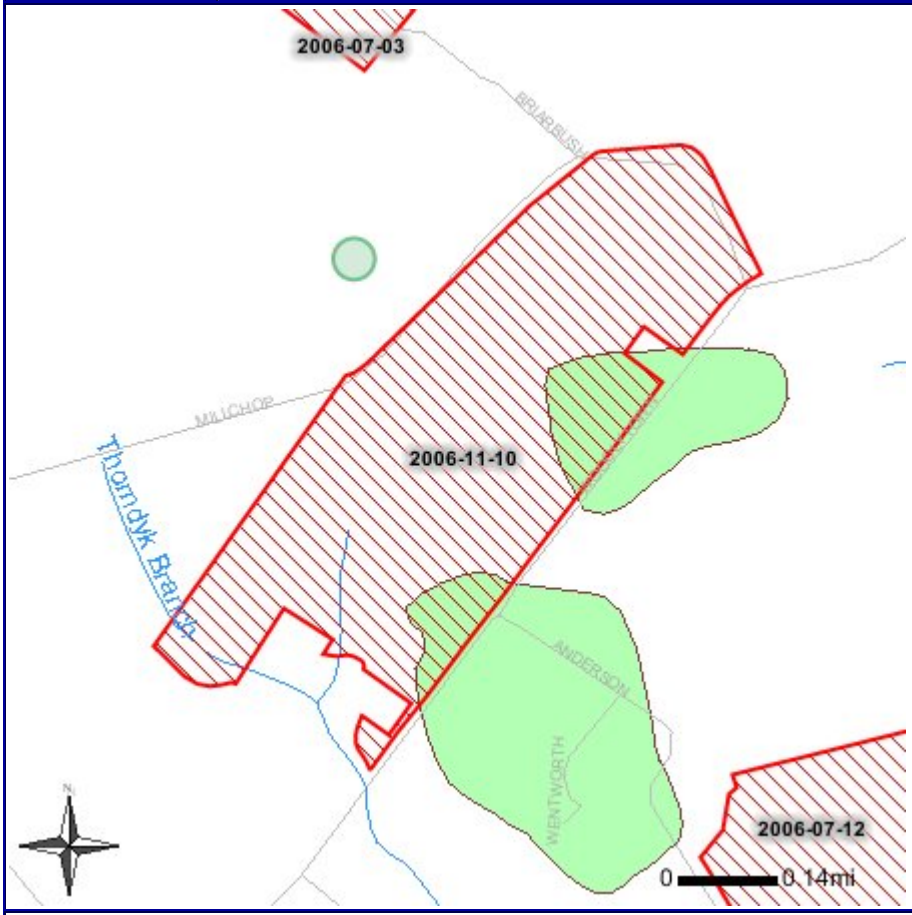
Sincerely,

Constance C. Holland, AICP
Director

CC: Kent County

Meyer Property

2006-11-10



PLUS Projects
NHDFlowLine
Kent WHPA
All Roads
Excellent Recharge Areas

This map was produced by the Delaware
Department of Natural Resources and Environmental Control.